

# BASF North Works – Perimeter Barrier Remedy Update

February 28, 2022

# Agenda

- 1 **Schedule**
- 2 **Resin Pilot Update**
- 3 **Perimeter Remedy Performance Standards**
- 4 **Summary Upcoming Work**
- 5 **Open Discussion**

# Schedule

# Perimeter Barrier Remedy Schedule

- 30% Design submitted on 9/2/22, in review with EPA and EGLE
- Interim Perimeter Groundwater Monitoring for Remedial Design Q3 event completed Sept. 2022
  - Data sent to EPA/EGLE 1/27/23
  - Results Status of EGLE data?
- Coordination between barrier remedy and UTC project is ongoing
  - UTC Remedial Action Project Application submitted 12/16/22
  - Coordination call with Heather Williams and Crawford White on 2/13
- Critical path for perimeter barrier remedy is the aboveground treatment system, collection trenches and conveyance lines – must have stable operation of groundwater collection and treatment system prior to completion of the barriers.

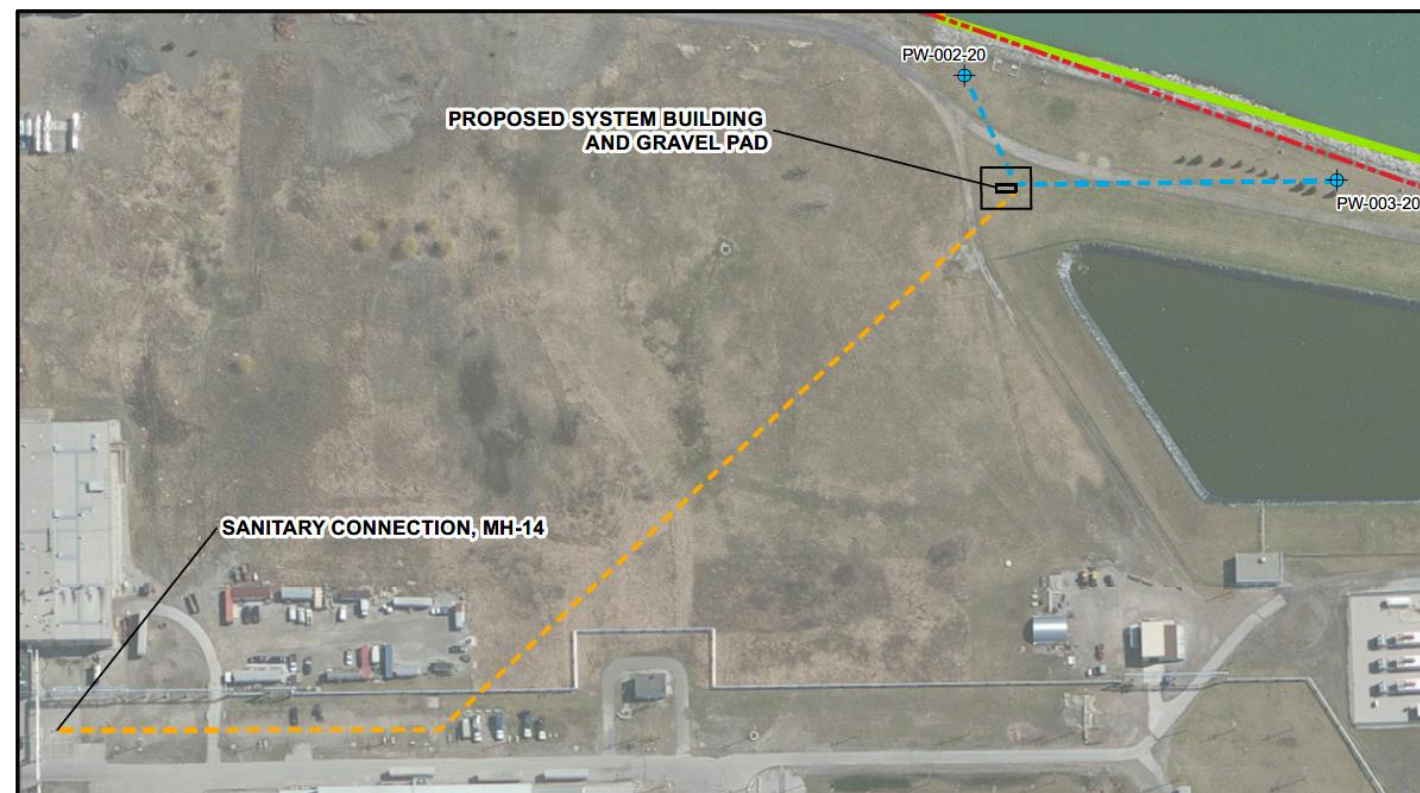
## Preliminary Working Schedule as submitted in the 30% Design Package

102	<b>Preliminary Design (30%)</b>	<b>0%</b>	<b>305 days</b>	<b>Mon 1/3/22</b>	<b>Fri 3/3/23</b>
103	Submittal of Preliminary Design Package	100%	1 day	Tue 9/6/22	Tue 9/6/22
104	EPA Review/Comment	0%	129 days	Wed 9/7/22	Mon 3/6/23
105	<b>Address Data Gaps (if necessary)</b>	<b>0%</b>	<b>433 days</b>	<b>Wed 9/7/22</b>	<b>Fri 5/3/24</b>
106	<b>Pre-Final Design (95%)</b>	<b>0%</b>	<b>304 days</b>	<b>Mon 3/6/23</b>	<b>Thu 5/2/24</b>
107	Development of Performance Standards	0%	196 days	Mon 3/6/23	Mon 12/4/23
108	Barrier Wall(s) Design	0%	196 days	Mon 3/6/23	Mon 12/4/23
109	Groundwater Extraction System Design	0%	196 days	Mon 3/6/23	Mon 12/4/23
110	Above Grade Treatment System Design	0%	196 days	Mon 3/6/23	Mon 12/4/23
111	Supporting Documents (QAPP, HASP, O&M Plan, CQAP)	0%	196 days	Mon 3/6/23	Mon 12/4/23
112	Target Submittal of Pre-Final Design Package	0%	1 day	Mon 12/4/23	Mon 12/4/23
113	EPA Review/Comment	0%	108 days	Tue 12/5/23	Thu 5/2/24
114	<b>Final Design (100%)</b>	<b>0%</b>	<b>1 day</b>	<b>Fri 5/3/24</b>	<b>Fri 5/3/24</b>

# Resin Pilot Test Update

## Resin Pilot Update

- Meet with DUWA 2/9/23 to review the permit application
- Clarified that DUWA was provided the data collected during the pumping tests of PW-002-20 and PW-003-20
- Permit Pending



## 7



# EPA Letter 1/25/23 – System Influent Analysis



Quarterly system influent sampling for:

- PFAS,
- VOC,
- SVOC,
- Metals (including mercury),
- Available Cyanide,
- pH, and
- 4,4-DDT – Not a site COC/will not be analyzed
  - RFI-MW-5 had an anomalous historical detection in 2012 (0.22 ug/L). Was re-sampled in 2014 and came back ND
  - No other wells have had detections of 4,4-DDT
  - EGLE sampled RFI-MW-5 for 4,4-DDT in March 2022, it was ND
  - Per August 31, 2022 email from EGLE stated they would no longer sample for 4,4-DDT/pesticides
- Per the Work Plan all influent samples will be collected after initial bag filters prior to treatment media (GAC and resin)
- All influent data will be validated with tier 2 reporting
- Results to be evaluated after 4 quarters to determine if continued sampling is warranted.
- Discontinuation of specific analytes will be recommended if results are non-detectable or below applicable criteria.



## Quarterly Reporting Requested in EPA 1/25/23 Letter

- **Quarterly Report to include:**
  - Table of validated analytical data
  - Level II lab reports
  - EPA R5 EDDs with validated data
  - Table and site figure showing quarterly static water levels
  - Total volume treated/discharged
  - Evaluation of the performance and effectiveness of the system
- Reports to be submitted within 45 days of receiving all laboratory data

## Comparison to Selfridge Air National Guard Pilot Test

	Selfridge Pilot Test	BASF Pilot Test
Treatment of	Stormwater	Groundwater
PFOS influent	~ 5,000 ppt	Estimated ~100-200 ppt
Pre-Treatment	Cartridge filters	Bag filters + F400 GAC
PFAS Treatment	F400 GAC	Resin
Changeout trigger and discharge limit	70 ppt PFOS	TBD based on DUWA permit

### Other takeaways:

- They determined Calgon F-400 is better than CETCO Flourosorb and Oxpure 1240 at PFOS treatment
- Observed their system flowrate to be greatest after media changeout
- Cartridge filters appear to remove 90%+ of the PFOS

# Perimeter Remedy Performance Standards

## 30% Design Performance Standards Basis:

“For the purposes of the preliminary 30% design, it has been agreed upon by BASF, USEPA, and EGLE during monthly meetings that the performance standards, with specific metrics, will address the following key elements:

- Physical containment barrier will contain groundwater and mitigate groundwater from entering the Detroit River. Performance standards will assign appropriate value to the presence of the physical containment barrier.
- The groundwater collection system will prevent groundwater elevations from rising upland of the containment barrier. Performance standards will incorporate a hydraulic gradient component that is protective of the Detroit River in combination with the physical containment barrier.
- Performance standards will be adaptable to future site conditions and manage risk over the lifetime operation of the barrier remedy.

Recommendations of the amount of time needed to reach specific performance metrics after system commissioning will also be included as part of the final design.”

# Proposed Performance Standards

- **“The groundwater collection system will prevent groundwater elevations from rising upland of the containment barrier.”**
  - Based on groundwater modeling the simulated pumping flux is estimated to be ~50 gpm
  - The treatment system design capacity is 100 gpm to accommodate increased infiltration, if needed
  - The total groundwater extraction rate will be monitored for seasonal variation and establishment of a baseline for future operation with the objective of preventing flooding of the Site
- **“Performance standards will incorporate a hydraulic gradient component that is protective of the Detroit River in combination with the physical containment barrier.”**
  - A series of piezometers will be installed approximately every 500 feet within the drain backfill, stilling well(s) will also be installed in the Detroit River for elevation comparisons
  - Manual water level will be collected from the monitoring network on a quarterly basis to verify a hydraulic gradient of 0.01 ft. or greater

**The purpose of the physical containment barrier is to eliminate the GSI pathway.**

# Joint Permit Update

## Joint Permit Application

- Preapplication meeting is not necessary
  - The purpose of this meeting is to answer questions regarding whether a permit is required – we understand a permit will be needed to construct the bulkhead
  - Need to apply for the permit to understand if the bulkhead is permissible
- Application process will be initiated once EPA/EGLE comments are received on the 30% Design
- Joint Permit Application will be submitted using the 30% design concepts and drawings
  - Will develop a few additional drawings (cross-sections and profiles) of the bulkhead to supplement the 30% drawing set
- Major Permit will likely be required based on linear footage of bulkhead
- Expected to take a minimum of 6 months for the permitting process once the application is submitted, permit is valid for up to 5 years



# Upcoming Work

# Ongoing / Upcoming Work

- February
  - Resin pilot test startup/operations pending permit receipt
- 95% Design
  - Coordination/alignment with the facility
  - Coordination and planning around addressing data gaps identified in the 30% design package
- Development of Performance Standards
  - Preparation/Coordination for Joint Permit pre-meeting
- Pending EPA Comments on 30% Design
  - 30% Design Submittal Response to Comments
  - 95% Design kick off pending EPA concurrence with 30% submittal
- Proposed next meeting March 30<sup>th</sup>@ 1pm CT/2pm ET

Deliverable	Submittal Date
Geotechnical Data Report Barrier Wall PDI	June 28, 2021
Hydraulic PDI Report (includes updated GW Model Report)	August 27, 2021
Barrier Wall Treatability Study Results	April 7, 2022
Pump and Treat Treatability Study	July 19, 2022
Basis of Design / 30% Design	September 2, 2022
Resin Pilot Work Plan	October 25, 2022

**Any comments or questions  
requiring discussion  
regarding the 30% design?**

# Open Discussion